

ROUTING CHECKLIST for Mechanical Permits (BL)

8/18/2015

To be completed by city staff:Structural review required? ☐ Yes ☐ No If yes, then respond to next question.

(Reviewer: Reject BL application if structural review will be done as part of the BL and missing structural information)

Separate building permit required? ☐ Yes ☐ No Associated building permit number ____ - ____ Bldg. initials ____

(Reviewer: Accept BL application if structural review will be done under a separate building permit even if missing structural information)

(Permit Tech: If no is checked then add structural reviewer to routing)

Land Use review required? ☐ Yes ☐ No LU Initials ____**Complete this checklist prior to application.**

1. Is any equipment located on the exterior or vented to the exterior of a building? (examples: rooftop or wall-mounted equipment, generators, HVAC equipment, exterior louvers, vents or exhaust terminals, gas piping)
 - ☐ Yes – Land use review required. [Land Use Submittal Requirements sheet 71](#).
 - ☐ No
2. Does the work include installation or modification to a fume hood, lab, chemical storage, paint spray booth, fuel tank or kiln?
 - ☐ Yes – Fire review required
 - ☐ No
3. Does the work include installation of an emergency or stand-by generator?
 - ☐ Yes – Land use and Fire review required
 - ☐ No
4. Does the work include installation of uninterrupted power source (UPS) equipment? (examples: battery storage and recharging facility)
 - ☐ Yes – 50 gallons or more of electrolyte – Fire review required
 - ☐ Yes – less than 50 gallons of electrolyte
 - ☐ No
5. Are structural or fire rated improvements needed for the mechanical installation? (shafts, walls, exterior screening, rafters, beams, etc.)
 - ☐ Yes – A separate building permit is required
 - ☐ No
6. Is any equipment over 400 pounds? If yes, please see attached document.
 - ☐ Yes
 - ☐ No
7. Does the work include the installation or modification of a Type I or Type II kitchen hood?
 - ☐ Yes – [Commercial Kitchen Hood checklist](#) must be submitted
 - ☐ No

PLEASE NOTE:

- For roof-mounted mechanical equipment, provide architectural elevation views with your mechanical permit application to verify that new or existing screening is in compliance with the *Land Use Code*.
- Mechanical units are not allowed in side-yard setbacks in residential districts & properties adjacent to residential districts.
- Separate permits are required for Fire Alarm, Fire Sprinkler, Structural Building Improvements, Electrical, Smoke Control, and Plumbing if that work is being done as part of your project. See "Building Code Requirements for Mechanical Installations" (next page) for coordination of structural and mechanical permits.
- If a fuel-fired boiler > 200 MBH is going to be installed, a separate permit is required from Washington State Department of Labor and Industries (L & I) Boiler Division. Contact Labor and Industries at Boiler@lni.wa.gov or 360-902-6400.

The answers to the above questions are accurate to the best of my knowledge.

Signature of Owner/Agent

Date

For any questions, visit or call Development Services staff below.

Hours are 8 a.m. to 4 p.m., Monday through Friday (Wednesday 10 to 4)

Assistance for the hearing impaired: Dial 711

<i>Land Use Reviewer, 425-452-4188</i>	<i>Items 1 and 3 on the Checklist</i>
<i>Building Reviewer prescreening, 425-452-4121</i>	<i>Items 5 and 6 on the Checklist</i>
<i>Fire Reviewer, 425-452-4122</i>	<i>Items 2, 3, and 4 on the Checklist</i>
<i>Permit Processing Technician, 425-452-4898</i>	<i>Building permit application and other submittal documents</i>

Building Code Requirements for Mechanical Installations

When is a separate building permit required?

Many mechanical HVAC installations involve the need to make structural improvements to the building or structure where new HVAC equipment will be installed. A separate building permit is typically needed for structural improvements to allow for review and inspection of those improvements. Some examples of typical structural improvements done as part of an HVAC installation include:

- Modifications to an existing roof or elevated floor to carry the weight of new equipment.
- Installation of screening as required by the Land Use ordinance.
- Connection of wall-mounted installations to an existing building.

Building plans and structural calculations are required in most cases to justify existing and/or new construction related to gravity or lateral support of new HVAC equipment. **Note:** If structural calculations are required by the City of Bellevue, the calculations, details, and drawings must be stamped and signed by an engineer licensed in the state of Washington. Please review **Table A** on the next page to determine if and when lateral engineering is required for your project.

Structural improvements *not listed below* require a separate building permit. **Note:** If a separate building permit is required, the mechanical permit will not be issued until the building permit is approved for issuance. If a separate building permit has already been submitted for review or has been issued, it is not necessary to provide the same information with the mechanical permit application. New HVAC equipment should not be installed on elevated roofs or decks until necessary structural improvements have been completed and approved by the building inspector.

If screening for exterior equipment is required, per the Land Use ordinance, provide lateral and gravity calculations for review. For projects requiring installation of shafts, plans & details showing the location and support of vertical and/or horizontal shafts must be provided. In many cases, shafts must be fire resistance-rated; assembly listing numbers and assembly details must be provided for review.

When is a separate building permit not required?

The following items are considered ancillary to the mechanical work, do not require a building permit, and may be reviewed as part of the mechanical permit:

- Seismic connections to prevent overturning of equipment during an earthquake.
- Creating an opening in an existing roof and installation of a curb to support new rooftop equipment.
- Blocking and/or brackets to support ductwork.
- Review of an existing roof or elevated floor assembly for new gravity loads when no structural improvements are needed. This review is necessary to confirm that an existing roof deck, floor framing or platform is adequate to support the new or replacement installation.
- Engineering for gravity is not required for rooftop equipment if the new unit will be in the same location and the weight does not exceed 5% more than the original equipment.

1. Structures with (I_p) = 1.0: The attached Table A specifies the City of Bellevue-approved seismic bracing requirements. [Importance factor (I_p) as defined in ASCE 7-05]
2. Structures with $I_p > 1.0$: All projects with $I_p > 1.0$ require an engineered design of seismic bracing systems for all mechanical (M), electrical (E), plumbing (P), sprinkler (S)^j, fire alarm (FA), and smoke control (SC) system components when the system component has been assigned an I_p of 1.5. The component I_p shall be taken as 1.5 if any of the following conditions apply.
 - a. The component is required to function for life-safety purposes after an earthquake, including fire protection sprinkler systems.
 - b. The component contains hazardous materials.
 - c. The component is in or attached to an Occupancy Category IV structure and it is needed for continued operation of the facility or where its failure could impair the continued operation of the facility.

Table A
Guidelines for System Component Seismic Bracing where $I_p = 1.0$

	Ducts & Piping	Equipment < 75#	75# < Equip ≤ 400#	Equip > 400# ^h
Mechanical Ductwork	SMACNA ⁱ Details/Spacing	N.A.	N.A.	N.A.
Gas and Hydronic Piping	SMACNA ⁱ Details/Spacing	N.A.	N.A.	N.A.
M, E, P, equip mounted ≤ 4' above the floor/roof & mounted with flexible connections^{a, b, c}	N.A.	No Requirement	No Requirement	Engineering for gravity and lateral support ^{d, e, g} (plan review required)
M, E, P, equip mounted > 4' above the floor/roof^{a, c}	N.A.	No Requirement	Engineering for gravity and lateral support ^{d, e, g} (field approve)	Engineering for gravity and lateral support ^{d, e, g} (plan review required)
M, E, P equip mounted with flexible connections.^{b, c}	N.A.	N.A.	N.A.	N.A.
M, E, P equip mounted from a wall or suspended from structure^f	N.A.	N.A.	Engineering for gravity and lateral support (field approve)	Engineering for gravity and lateral support (plan review required)
Plumbing Piping (drain, waste, & vent)	Per UPC	N.A.	N.A.	N.A.

- a. 4' dimension measured from the floor to the mounting point location.
- b. Mechanical, electrical and plumbing components with flexible connections installed between the components and associated ductwork, piping, and conduit.
- c. Water tank restraints required per UPC Section 508.2.
- d. Engineering for gravity not required when mounted at slab on grade
- e. Lateral engineering for nonsuspended equipment is not required when the height/width ratio is ≤ 1.0 (in all horizontal directions)
- f. Engineering shall address the bracing system, the point(s) of attachment, and the capacity of the building element or structure supporting the attachment and bracing system.
- g. Rooftop equipment: Engineering for gravity is not required for rooftop equipment if the new unit will be in the same location and the weight does not exceed 5% more than the original equipment.
- h. Water heaters ≥ 60 gallons will fall under this category
- i. SMACNA Restraint Manual "Guidelines for Mechanical Systems": 2nd Ed, Feb. 1998, 2006 Uniform Plumbing Code Table 3-2
- j. Seismic bracing for fire protection sprinkler systems in seismic design category D-F designed per NFPA 13 as specified in ASCE 7-05 Section 13.6.8.